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ABSTRACT

This technical study is concerned with both the statistical and policy effects of alternative definitions of poverty which result when the definition of means is altered by varying the time period (accounting period) over which income is measured or by including in the measure of means not only realized income, but also unrealized income and wealth itself. The first part of the study examines how various accounting periods and wealth measures of means affect counts of poverty and determine eligibility for assistance programs. The distribution of poverty across socioeconomic classes, as well as transits into and out of poverty under various definitions, is studied. The second part of the study examines the application of means measurements in existing income-conditionined public income transfer programs. The failure of current eligibility rules to count potential income, and the inconsistent use of various asset tests and accounting periods are noted. It is concluded that counts of the poverty population depend substantially upon the length of the accounting period and the extent to which net worth is considered available as means with which to meet consumption expenses during a period. The screening effects obtained by lengthening the accounting period are often similar to those obtained by adding some fraction of net worth to income in measuring means. Thus there are serious equity considerations in choosing the length of the accounting period and the treatment of net worth in measures of means because the share of total welfare going to various groups depends upon these two factors. Existing transfer programs, adopted in piecemeal fashion, have not made explicit their choice among various goals. These programs have adopted conflicting, confusing, and inequitable criteria for eligibility. (Author/AM)

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THE MEASURE OF POVERTY

Technical Paper VI
Wealth and the Accounting Period in
the Measurement of Means

By: Department of the Treasury
Eugene Steuerle
Nelson McClung

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February 10, 1977

Virginia Trotter
Assistant Secretary for Education
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William A. Morrill
Assistant Secretary for Planning
and Evaluation
Department of Health, Education,
and Welfare

I am pleased to forward Technical Paper VI, "Wealth and the Accounting Period in the Measurement of Means". It contains supporting data for the report entitled The Measure of Poverty which was prepared in compliance with section 823 of the Education Amendments of 1974. This paper was prepared by Nelson McClung and Eugene Steuerle, Department of Treasury. It does not present the views of the Task Force as a whole or of individual members.

The paper is concerned with both the statistical and policy effects of alternative definitions of poverty which result when the definition of means is altered by varying the time period (accounting period) over which income is measured or by including in the measure of means not only realized income, but also unrealized income and wealth itself.

Bette Mahoney

Bette Mahoney
Chairman,
Poverty Studies Task Force

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PREFACE

Section 823 of the Education Amendments of 1974 (PL 93-380) requires a thorough study of the manner in which the relative measure of poverty for use in the financial assistance program, authorized by Title I of the Elementary and Secondary Education Act of 1965, may be more accurately and currently developed.

That financial assistance program is administered by the Commissioner of Education, through the Office of Education, Department of Health, Education, and Welfare. An important feature is the use of a formula prescribed by Section 103 of the Elementary and Secondary Education Act for the annual distribution of Federal funds to school districts. A significant factor in the formula is the number of school-aged children 5 to 17 in poor families within each school district. The measure of poverty which is used, and which is the subject of the study mandated by Section 823, is the Federal government's official statistical definition of poverty (also known as the Orshansky, OMB, Census Bureau, or Social Security poverty lines).

Other work related to poverty measurement has been called for in recent legislative acts. In the Comprehensive Employment and Training Act, the Secretary of Labor is directed to develop and maintain comprehensive household budget data at different levels of living, including a "level of adequacy." Any such review of the level of adequacy must necessarily be closely related to measures of poverty. The Housing and Community Development Act of 1974 gives the Secretary of HUD authority to adjust the poverty measure to reflect local variations in the cost of living. The Conference Report accompanying it directs the Secretary to develop or obtain data with respect to the "extent of poverty" by metropolitan areas and to submit such data to the Congress as part of a March 31, 1977, report.

Because of the broad scope of the subject matter, coverage of the study of the measure of poverty mandated by Section 823 of the Education Amendments of 1974 was extended to include implications of the study findings for the poverty-related programs of all affected Federal departments and agencies. The Title I program of the Elementary and Secondary Education Act was given the most detailed treatment to meet the legislatively-mandated specifications for the study as well as to serve as a primary example of application of the concepts of poverty measurement to Federal programs. The findings of the study are published in a report entitled, "The Measure of Poverty." An important objective of the study was full discussion and documentation of the major elements of currently applied and potentially usable poverty measures. Material containing essential supporting documentation for the study was assembled as technical papers. These have been written to stand alone as complete technical treatments of specific subjects.

The study was performed under the direct guidance of a Poverty Studies Task Force of the Subcommittee on the Education of the Disadvantaged and Minorities, Federal Inter-Agency Committee on Education. Technical papers were prepared at the request of, under the direction of, and subject to review by the Task Force members. Some papers are primarily the work of one or two persons; these are attributed to their authors. Others result from the collective input of Task Force members or advisors and no specific attribution is given except to the Task Force, as a whole.

The following listings show members of the Poverty Studies Task Force by appropriate Federal departments and agencies, and the titles and authors of the technical papers.

This report contains Technical Paper VI, Wealth and the Accounting Period in the Measurement of Means. It was prepared by Eugene Steuerle and Nelson McClung, Department of the Treasury.

The authors wish to acknowledge especially Jane Lee and Julie Mitchell of the Department of Health, Education, and Welfare, and Richard Coe and Greg Duncan of the Institute for Social Research in Ann Arbor, Michigan, for their assistance in the preparation of this report.

To obtain copies of the report, "The Measure of Poverty," or any of the technical papers, please write to:

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Federal Interagency Committee on Education
Subcommittee on Education for the Disadvantaged and Minorities

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TECHNICAL PAPERS

I.	Documentation of Background Information and Rationale for Current Poverty Matrix	Mollie Orshansky Social Security Administration
II.	Administrative and Legislative Usages of the Terms "Poverty," "Low Income," and Other Related Terms	Poverty Studies Task Force with assistance from Ellen Kraus
III.	A Review of the Definition and Measurement of Poverty	Urban Systems Research and Engineering, Inc.
IV.	Bureau of Labor Statistics Family Budgets Program	Mark Sherwood Bureau of Labor Statistics
V.	The Consumer Price Index	Jill King Mathematica, Inc.
VI.	Wealth and the Accounting Period in the Measurement of Means	Nelson McClung and Eugene Steuerle Department of the Treasury
VII.	In-kind Income and the Measurement of Poverty	Janice Peskin Health, Education, and Welfare
VIII.	The 1972-73 Consumer Expenditure Survey	Jill King Mathematica, Inc.
IX.	Inventory of Federal Data Bases Related to the Measurement of Poverty (a) Non-Census Data Bases (b) Census Data Bases	Connie Citro, Mathematica, Inc. Bureau of the Census
X.	Effect of Using a Poverty Definition Based on Household Income	Jack McNeil, Doug Sater, Arno Winard Bureau of the Census
XI.	Update of the Orshansky Index	Mollie Orshansky Social Security Administration
XII.	Food Plans for Poverty Measurement	Betty Peterkin Department of Agriculture
XIII.	Relative Poverty	Jack McNeil Bureau of the Census
XIV.	Relative Measure of Poverty	Stanley Stephenson Health, Education, and Welfare
XV.	Analytic Support for Cost-of-Living Differentials in the Poverty Thresholds	Thomas Carlin Department of Agriculture
XVI.	Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act	Abdul Khan and Herman Miller Health, Education, and Welfare
XVII.	The Sensitivity of the Incidence of Poverty to Different Measures of Income: School-age Children and Families	Survey Research Center University of Michigan
XVIII.	Characteristics of Low-Income Populations Under Alternative Poverty Definitions	Lawrence Brown Health, Education, and Welfare

EXECUTIVE SUMMARY

A household is poor if its means are inadequate to meet its needs. This study is concerned with both the statistical and policy effects of alternative definitions of poverty which result when the definition of means* is altered by varying the time period (accounting period) over which income is measured or by including in the measure of means not only realized income, but also unrealized income and wealth itself.

As long as household income varies over time, it is only logical that counts of the poverty population decrease as the accounting period is extended from one month to one year to five years and beyond. The "permanent" poor are poor during any long accounting period and during most shorter intervals of that period as well. That is, their monthly income, yearly income, five-year income, etc. are all low. On the other hand, there are numerous households which may have a low income for one month, yet not for the year, or for one year, but not for five years. These "temporary" poor are much more likely to be included in "the poverty population" the shorter the accounting period over which income is measured.

Counts of the poverty population thus increase as the accounting period is shortened, but the extent of the increase varies quite significantly across socioeconomic groups. For instance, there is a 65 percent increase in the number of non-whites who were measured as poor in any one of the years between 1968 and 1972 over those who were measured as poor for the period as a whole. Yet for the self-employed, the corresponding increase was 377 percent. In general, those groups with lower variances in income -- non-whites, aged, families with heads not in the labor force, or with female heads -- have the smallest increase in poverty counts as the accounting period is shortened. This has substantial implications for policy, because the share of assistance going to these groups will be smallest under grant programs with short accounting periods.

Shifts in the accounting period also result in a reclassification of households which are poor and those which are nonpoor. For instance, 53 percent of those which are measured as poor in at least one of five years would not be measured as poor under a five-year standard. Similarly, 11 percent of the non-poverty population under a five-year standard will be counted as poor under an annual standard during at least one of the five years.

As the accounting period is lengthened, income as a measure of means more closely approximates permanent income. Similarly, addition of some portion of wealth to current income extends the measure of

*Brief definitions are contained in the section Data Sources and Definitions, while precise definitions are contained in the Appendix to this paper.

means to past time periods, since past income and current wealth are correlated. Wealth and an extended accounting period are also logically related by the fact that income over an accounting period is in effect totaled and treated as a stock of assets (wealth) available to meet consumption needs during the period.

Because of these relationships, inclusion of wealth in means will decrease the count of the poor in a manner similar to a lengthening of the income accounting period. Both methods will orient a program more to the needs of the permanent poor and less to those who have suffered temporary shortfalls in income. Nonetheless, there are both similarities and differences in the two methods as regards their effect on different socioeconomic groups. Non-whites still receive a smaller share of assistance and the self-employed a greater share when either the accounting period is shortened or wealth is excluded from the measure of means. The aged, on the other hand, because of their lower-than-average incomes but higher-than-average wealth, lose when the accounting period is shortened, but gain from the exclusion of net worth from means tests or measurements.

It has been noted that counts of the poor decrease as wealth rather than realized income alone is counted in the measure of means. There are two principal reasons for this effect. First, realized income does not include portions of economic income such as the value of homeownership or capital gains from corporate stock or real estate. For instance, this study finds that 17.4 percent of those who are poor under an annual realized income standard are nonpoor when imputed rental value of equity in own home is added to income. Secondly, a measure of poverty based purely upon realized income ignores the fact that a person can consume not merely from his income but from his savings or wealth as well. Thus, it is demonstrated that 18.6 percent of those who were poor in 1966 under an income standard also had $10,000 or more in assets.

Although this study points out the limitations of definition of means based purely upon realized income during some arbitrary accounting period, it also notes the equity and efficiency dilemmas posed by the choice of the appropriate measure of means to apply to grant or transfer programs. In addition to compromising between the needs of those who are temporarily or permanently poor, programs must also avoid too many work or savings disincentives, must decide which particular needs of which particular parts of the poverty population are most important, etc.

Whatever choices are made among these dilemmas, definite improvements can be made in current income-conditioned public income transfer programs. For instance, at a minimum, property income should include potentially realizable income such as capital gains on land. In addition, eligibility criteria for programs cannot merely exclude individuals once they obtain a certain dollar value of wealth -- else there exists an absurdly high tax rate on the last dollar of savings at that wealth limit. Perhaps most importantly, the conflicting criteria of the programs now in existence must be made more uniform so as to provide equal benefits to those equally in need and to eliminate the capricious exclusion of those needy families who merely lack knowledge of the procedures for participation in one of these many programs.

INTRODUCTION

Poverty is defined here as the lack of means with which to support needs. Many other studies in this series analyze alternative definitions of poverty which result from alternative definitions of needs across households, across time, across regions, and according to changing concepts of which consumption items are minimally necessary. This paper, on the other hand, assumes the needs of families to be constant in real terms while definitions of means, and hence definitions of poverty, are changed.

For any time period the simplest measure of a household's means is its realized income. It is this simple measure that is in fact employed in most welfare programs and in the income tax system itself. Although it is often administratively practical to use this measure, the measure is nonetheless arbitrary and incomplete.

This incompleteness can be illustrated by two examples. Suppose that a household receives all its income in a lump sum at the very beginning of a time period and spends that income almost immediately. Before receiving the income it may have been poor and after spending the income it will again be poor. But whether or not it is measured as poor depends upon the length of the accounting period, i.e., the timeframe, over which its income is averaged.

Suppose, next, that another household receives little or no regular income, yet maintains a house and other assets worth substantial sums of money. In this case the household may be measured as poor because income which accrues to it from property is never realized in a sales transaction, and also because a measure of poverty based purely on income implies that wealth itself need never be spent to meet consumption needs.

A strong logical connection exists, obviously, between extending of an accounting period and including net worth as well as income in means. In both cases, there is a refinement of the measure of means by inclusion of additional items. In the first case the measure of income is not pegged to a single period, but includes income from other periods. In the second case savings and inheritances, also from other (past) periods, augment or substitute for current income.

Alternative definitions of poverty thus emerge when the definition of means is modified by inclusion of factors other than immediate cash income. This study examines the statistical and policy effects of varying the time period over which income is measured and of including in the measure of means not only realized income, but also unrealized income and wealth itself. It will be found that inclusion of wealth in means will decrease the count of the "poor" in a manner similar to a lengthening of the income accounting period. Both methods will orient a program less to the needs of those who have suffered temporary shortfalls in income and more to the needs of those who are more likely to be among the permanent poor. Moreover, such treatment of the accounting period and of net worth introduces serious equity considerations. The relative shares of total welfare expenditures going to various

socioeconomic groups depend dramatically upon how these two factors are treated. In general, the long-term or "permanent" poor tend to receive relatively less assistance under a short accounting period and through the exclusion of assets of net worth from means measurements. The screening effects obtained by lengthening the accounting period are thus similar to those obtained by adding some fraction of net worth to income in measuring means.

Data Sources and Definitions

Data used in this study originates from the Panel Study of Income Dynamics (SID), 1968-1972 Interviewing Years, conducted for the Office of Economic Opportunity by the Institute for Social Research of the University of Michigan and from the 1966 Survey of Economic Opportunity (SEO) conducted for the Office of Economic Opportunity by the Bureau of Census. Our analysis of the SID is confined to five years of that survey, so that imputed rent can be added to income measures when desired.

The strength of the SEO study is that it provides fairly comprehensive data on the assets and debts of each household. The principal advantage of the SID is that it is a panel study -- comprehensive income data is made available for a large sample of households over a period of several years. In addition, the SID contains information on imputed rent from housing covering the five years used here.

From both the SEO and SID samples it is possible to derive for each household an income measure roughly corresponding to its one-year pre-assistance income. Assistance, in this case, means only income-conditioned public transfers and private welfare transfers. Thus, grants under wage replacement programs are treated as own income and not as assistance. Using this one-year income standard as one measure of means of households, it is possible to examine changes in the composition of the poverty population as either the accounting period is lengthened or as various assets are treated as available to meet consumption needs.

In the SID file, four definitions of means are employed: 1) 1972 SID Income, 2) 1972 SID Income-Imputed Rent, 3) 5-Year Average SID Income, and 4) 5-Year Average SID Income-Imputed Rent. The first measure is of total nonassistance family money income for 1972, while the latter three measures modify the first by either adding imputed rental value of owner occupied housing, averaging five years of family money income, or both.

Except for imputed rent, portions of net worth are added to means in four different ways through use of the SEO file. The five definitions of means that result are 1) 1966 SEO Income, 2) 1966 SEO Income-Liquid Assets, 3) 1966 SEO Income-Net Worth, 4) 1966 Income-Fraction of Net Worth, and 5) 1966 SEO Income-Annuity. The first definition is that which corresponds most closely to the one-year definition of income obtained from the SID file. The basic meaning of the remaining variables can be understood from their names. Thus, Income-Liquid Assets and Income-Net Worth are obtained (approximately) by adding to the income variable the value of liquid assets and the

value of net worth respectively. Income-Fraction of Net Worth is derived by adding ten percent of net worth to income while subtracting all income from assets. Finally, Income-Annuity adds the annuity value of net worth to Income while also subtracting income from assets. 1/ In all cases, these latter four measures are confined to be no less than Income itself. Further details on the derivation of these measures are contained in Appendix A.

The first part of this study will examine how various accounting period and wealth measures of means affect counts of poverty and determine eligibility for assistance programs. The distribution of "poverty" across socioeconomic classes, as well as transits into and out of poverty under various definitions, will be studied. The second part of the study examines the application of means measurements in existing income-conditioned public income transfer programs. The failure of current eligibility rules to count potential income, and the inconsistent use of various asset tests and accounting periods will be noted.

MEASURING POVERTY UNDER ALTERNATIVE DEFINITIONS OF MEANS

The Accounting Period

The longer the accounting period, the smaller the proportion of a population which will be counted poor under a given poverty criterion. The logic of this relationship between the length of the accounting period and the proportion of persons counted poor may be illustrated by the condition of a person who, when he works, earns a wage of $400 per period, and who, when he does not work, has a total income of zero per period. If the poverty criterion is $200 per period, then this person must work less than one-half of all periods for his average income to be under $200 per period and for him thus to be counted poor.

Suppose now that this person has a random probability 9/10ths that he will work in any given work period. Then his probability of being measured as poor is a direct function of the number of work periods in the accounting period over which his income is measured. 2/ The following table demonstrates how this process works out:

Length of Income Accounting Period (number of work periods in income accounting period)	Probability of Being Measured as Poor (probability that average income will be less than $200/work period)
	(percent)
1	10.00
2	1.00
4	0.37
6	0.13
8	0.04
10	0.01

This simple example suggests why one might expect a decline in the number of poor families as the accounting period is extended. Of course, a more elaborate example would take into account the fact that a family's chance of being poor in a given period will be influenced by its status in the previous period. Terence Kelly, for instance, has studied the rates at which persons rotate between poor and nonpoor populations. 3/ His estimates suggest that, for the early 1970's when the proportion poor was a fairly steady 12 percent, the probability of a state change (i.e., poor to nonpoor or vice versa) was about 30 percent for the poor and about 4 percent for the nonpoor.

While elaborations such as Kelly's are useful for many purposes, they still do not mitigate the basic fact that measures of the size of the poverty population will tend to decline in almost exponential fashion as the accounting period is extended. Two previous researchers empirically demonstrate this theoretical observation. Developing and then using one of the data sources tapped for this study, Jonathan Lane and James Morgan estimated that 21 percent of the total population fell into poverty for at least one year between

1967 and 1972 while, if average income is compared to the average poverty criterion for these six years, only 7 percent of the population is counted poor. 4/ As for shorter accounting periods, Jodie Allen simulated costs and coverage (number of eligible poor persons) of a Family Assistance Plan for accounting periods of less than one year. 5/ For the simple annual, quarterly and monthly retrospective plans, Allen estimates that for the urban population the annual cost of the quarterly plan is 1.09 and the monthly plan is 1.135 times the cost of the annual plan and that annual coverages are 1.35 and 1.59 times coverage of the annual plan. 6/ Both cost and coverage, therefore, are roughly negative exponential functions of the number of accounting periods in a given measurement period.

The size of the poverty population under various accounting periods does not reveal the differential effects of various accounting periods on subgroups of the population, nor of shifts in the persons who are counted as poor or nonpoor under the various definitions. For that purpose, the Survey of Income Dynamics is the most useful source and the proceeding analysis will, therefore, proceed from the data contained in that survey. 7/

Table 1 displays the change in the size of the poverty population under eight alternative definitions of poverty. (Definitions 2, 4, 6, and 8, which include the addition of imputed rent to income, will be discussed in the next section.) The basic standard of comparison discussed above was between being poor over an extended period (SID/PSD 3) or poor over a shorter period (SID/PSD 5 or SID/PSD 1). In this sample, when the accounting period is shortened from five years to any one year, the number of persons counted poor in at least one of those five years more than doubles. In terms of annual counts of the poor, a comparison of the number of poor over a five-year period (SID/PSD 3) with the number of poor over the one-year period, 1972 (SID/PSD 1) reveals that the number of persons counted poor in a particular year is greater by about 20 percent.

Table 2 relates poverty to the socioeconomic composition of the population by presenting statistics on the extent of poverty within various socioeconomic groups under both one-year and five-year accounting periods. It indicates that poverty is more prevalent among non-whites, those not in the labor force, the aged, and families with female heads. The frequency of poverty among all families with children, however, seems to differ little from that within the population as a whole, possibly because of all families with children, the majority have workers who are in their most productive years at the same time that child-rearing needs of families reach a maximum.

The length of the accounting period significantly affects the distribution of poverty families across socioeconomic groups. While all groups show an increase in the number of poor families as the accounting period is shortened, that increase is smallest for those groups whose members have steady, yet low incomes. On the other hand, socioeconomic groups with larger income variance over time will demonstrate the larger increases in the percentage of its members counted as poor. The most striking example of such

Table 1. Percentage of Total Population Falling into or near Poverty by Various Poverty Standard Definitions (PSD) (Source: Survey of Income Dynamics) (SID)

SID Poverty Standard	Means/Needs											
	0-.2	.2-.4	.4-.6	.6-.8	.8-1.0	Total in Poverty	1.0-1.2	1.2-1.4	1.4-1.6	1.6-1.8	1.8-2.0	2.0+
1	1.8	1.1	2.0	2.7	3.3	10.9	3.1	3.6	3.9	3.8	4.4	70.4
2	1.7	.9	1.4	2.0	3.0	9.0	3.1	3.6	3.1	3.2	3.9	74.0
3	.9	1.1	1.8	2.8	2.5	9.1	2.8	3.7	3.6	4.1	4.1	72.7
4	.9	.9	1.5	2.1	2.2	7.6	2.7	2.9	3.5	3.7	4.0	75.7
5	-	-	-	-	-	19.4	-	-	-	-	-	-
6	-	-	-	-	-	16.7	-	-	-	-	-	-
7	-	-	-	-	-	4.9	-	-	-	-	-	-
8	-	-	-	-	-	3.9	-	-	-	-	-	-

SID Poverty Standard Definitions (PSD):

1. 1972 SID Income/Needs less than 1.0
2. 1972 SID Income-Imputed Rent/Needs less than 1.0
3. 5-Year Average SID Income/5-Year Average Needs less than 1.0
4. 5-Year Average SID Income-Imputed Rent/5-Year Average Needs less than 1.0
5. SID Income/Needs less than 1.0 for any year, 1968-1972
6. SID Income-Imputed Rent/Needs less than 1.0 for any year, 1968-1972
7. SID Income/Needs less than 1.0 for every year, 1968-1972
8. SID Income-Imputed Rent/Needs less than 1.0 for every year, 1968-1972

Table 2. Poverty Counts of Socioeconomic Groups
(Survey of Income Dynamics)

SID Poverty Standard	Total Population	White	Non-White	Self-Employed	In Labor Force, but Not Self-Employed	Not in Labor Force	Head Aged 65 or More	Head under Age 65	Families with Children Aged 0-17	Families with Female Head	Families with Male Head
1	10.9	8.0	30.1	8.7	4.4	26.8	18.8	8.8	11.2	23.0	7.0
2	9.0	6.1	28.6	5.1	4.2	21.9	13.5	7.9	10.2	20.0	5.5
3	9.1	6.1	28.9	3.4	3.2	24.8	17.0	7.0	9.1	20.6	5.4
4	7.6	4.6	27.6	1.9	2.9	20.5	12.2	6.4	8.6	17.6	4.4
5	19.4	15.1	47.7	16.2	11.0	40.0	31.2	16.3	18.3	36.5	13.8
6	16.7	12.2	46.1	14.4	10.3	32.3	22.6	15.1	17.5	30.6	12.2
7	4.9	3.1	17.2	1.1	1.4	14.6	10.6	3.4	4.6	12.2	2.6
8	3.9	2.2	15.6	0.7	1.3	11.3	6.7	3.2	4.4	10.3	1.9

SID Poverty Standard Definitions (PSD):

1. 1972 SID Income/Needs less than 1.0
2. 1972 SID Income-Imputed Rent/Needs less than 1.0
3. 5-Year Average SID Income/5-Year Average Needs less than 1.0
4. 5-Year Average SID Income-Imputed Rent/5-Year Average Needs less than 1.0
5. SID Income/Needs less than 1.0 for any year, 1968-1972
6. SID Income-Imputed Rent/Needs less than 1.0 for any year, 1968-1972
7. SID Income/Needs less than 1.0 for every year, 1968-1972
8. SID Income-Imputed Rent/Needs less than 1.0 for every year, 1968-1972

a large increase in numbers of poor occurs as the accounting period is shortened for the self-employed. When "SID Income" is accepted as the measure of "means," only about 3 1/3 percent of the self-employed are "poor" over a five-year period (SID/PSD 3). Over 16 percent of the self-employed, however, are defined on the annual basis as "poor" for at least one of these five years. No other socioeconomic group displays so large an increase.

Table 3 shows for each of ten socioeconomic groups the percentage increase in size of its poverty population as the accounting period is shortened to one year. It vividly demonstrates the effect of shortening of the accounting period on the size of the poverty population of the self-employed, vis-a-vis that of other groups. It also demonstrates that those socioeconomic groups with the greatest incidence of poverty have the least increase in incidence of poverty (in relative terms) by a shortening of the accounting period. The policy implications of this finding for an assistance program with fixed funding is significant: a decrease in the length of the accounting period will substantially alter the shares of assistance going to different socioeconomic groups, with the long-term or "permanent" poor receiving smaller and smaller shares as the accounting period is shortened.

Not only do the numbers of poor increase as the accounting period is shortened, but there also occurs a shift in populations of poor and nonpoor as nonpoor become reclassified as poor, and poor become reclassified as nonpoor. Table 4 summarizes the shift in membership within the "poor" and the "nonpoor" populations as the accounting period is changed from one year to five years. Part (a) of the table reveals that 31 percent of those who were poor in 1972 by an annual standard of SID Income would not be considered poor if their means had been measured by five-year SID Income. In addition, over 17 percent of those who would be poor by the five-year standard would be considered nonpoor under a one-year standard in 1972 [see part (b)]. Part (c) reveals that over the course of five years, over half (53 percent) of those who were poor in at least one of these years would be nonpoor under the five-year standard. From another viewpoint, 11 percent of the nonpoverty population under a five-year standard would be counted as poor under an annual standard during at least one of the five years [see part (d)].

Table 5 is an expansion of Table 4(a) which reveals the extent to which classifications of households change when the measure of means is changed from 1972 SID Income to five-year SID Income. In Table 5 the poor and nonpoor populations have been broken down even further into subgroups by their means divided by their needs (hereafter defined as "well-being"). Bold numbers in parentheses show the percentage of households which have the same relative measure of "well-being" under either the one-year or five-year definition. That numbers on or near the diagonal tend to be larger than those which are further away indicates that when the measure of well-being changes with definition, it usually does not change drastically. Thus, the great majority of those who are poor under one definition are not far removed from poverty even when they are measured as nonpoor under an alternative definition. Nonetheless, the figures still disclose that

Table 3. Percentage Increase in Poverty Population of Various Socioeconomic Groups* as the Accounting Period is Shortened

Percentage Increase in Count of	Total Population	White	Non-White	Self-Employed	In Labor Force, but Not Self-Employed	Not in Labor Force	Head Age 65 or More	Head under Age 65	Families with Children Aged 0-17	Families with Female Head	Families with Male Head
Poor for 1972 Over Poor for 1968-1972 (SID/PSD 1 vs. SID/PSD 3)	20	31	4	156	38	8	11	26	23	12	30
Poor in any Year, 1968-1972 Over Poor for 1968-1972 (SID/PSD 5 vs. SID/PSD 3)	113	148	65	377	244	61	84	133	101	77	156

*For this table, means are defined to equal SID Income over different accounting periods.

Table 4. Transits into and from the Poverty Population under Alternative Accounting Periods

(a) Poverty Status for 1968-1972 (SID-PSD-3) Given Poverty Status for 1972 (SID-PSD-1)
(in percent)

	Poverty vs Non-Poverty for 1968-1972		
Poverty	Poverty	Non-Poverty	Total
Poverty vs Non-Poverty for 1972	68.9	31.1	100.0
Non-Poverty	1.8	98.2	100.0

(b) Poverty Status for 1972 (SID-PSD-1) Given Poverty Status for 1968-1972 (SID-PSD-3)
(in percent)

	Poverty vs Non-Poverty for 1972		
Poverty	Poverty	Non-Poverty	Total
Poverty vs. Non-Poverty for 1968-1972	82.5	17.5	100.0
Non-Poverty	3.7	96.3	100.0

(c) Poverty Status for 1968-1972 (SID-PSD-3) Given Poverty Status For Any Year, 1968-1972 (SID-PSD-5)
(in percent)

	Poverty vs Non-Poverty for 1968-1972		
Poverty	Poverty	Non-Poverty	Total
Poverty vs Non-Poverty for Any Year, 1968-1972	46.9	53.1	100.0
Non-Poverty	0.0	100.0	100.0

(d) Poverty Status for Any Year, 1968-1972 (SID-PSD-5) Given Poverty Status for 1968-1972 (SID-PSD-3)
(in percent)

	Poverty vs Non-Poverty for Any Year, 1968-1972		
Poverty	Poverty	Non-Poverty	Total
Poverty vs Non-Poverty for 1968-1972	100.0	0.0	100.0
Non-Poverty	11.3	88.7	100.0

Table 3. 5-Year Average SID Income/5-Year Average Needs According to 1972 SID Income/Needs

1972 SID Income/Needs	Poor					Nonpoor						Totals	
	0.00-0.20	0.21-0.40	0.41-0.60	0.61-0.80	0.81-1.00	1.01-1.20	1.21-1.40	1.41-1.60	1.61-1.80	1.81-2.00	2.00+	Poor (≤1.00)	Nonpoor (≥1.01)
Poor													
0.0-0.20	***(46.0)***	18.1	11.8	8.5	4.1	2.5	3.5	0.5	1.7	0.0	3.2	88.5	11.5
0.21-0.40	4.1	***(29.7)***	19.9	23.2	1.0	3.1	0.2	0.8	1.0	3.8	10.3	77.8	22.2
0.41-0.60	1.4	15.5	***(43.6)***	18.3	6.7	3.2	2.1	1.4	3.4	0.1	4.2	85.5	14.5
0.61-0.80	0.0	2.1	11.6	***(38.9)***	9.9	13.1	8.5	4.8	0.5	0.5	10.2	62.5	37.5
0.81-1.00	0.0	3.0	1.9	13.4	***(31.9)***	13.3	15.3	5.4	5.6	1.7	8.6	50.2	48.8
Nonpoor													
1.01-1.20	0.0	0.1	1.0	7.8	17.3	***(26.5)***	14.5	8.7	11.6	2.9	9.6	26.2	73.8
1.21-1.40	0.0	0.0	1.0	3.4	7.4	12.2	***(20.8)***	15.6	9.1	7.2	23.3	11.8	88.2
1.41-1.60	0.0	0.0	0.4	1.1	3.1	6.8	18.6	***(23.2)***	16.5	8.9	21.2	4.6	95.4
1.61-1.80	0.0	0.0	0.0	0.5	0.1	4.9	13.7	21.1	***(14.1)***	9.0	36.6	0.6	99.4
1.81-2.00	0.0	0.0	0.0	0.9	0.3	1.5	4.1	10.0	15.3	***(22.5)***	44.3	1.2	98.8
2.00+	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	1.8	2.8	***(44.5)***	0.1	99.9
Totals													
Population	0.9	1.1	1.8	2.8	2.5	2.8	3.7	3.6	4.1	4.1	72.7	9.1	90.9
Poor	8.3	10.3	15.5	20.7	14.1	8.6	7.7	3.2	3.2	6.0	7.4	***(68.9)***	31.1
Nonpoor	0.0	0.0	0.1	0.5	1.1	2.1	3.2	3.7	4.2	4.5	80.6	1.8	***(98.2)***

Bold numbers in parentheses show the percentage of households which have the same relative measure of "well-being" under either the one-year or five-year definition.

a number of families are quite well-off under a five-year standard, but yet poor under the annual standard. For instance, the first five entries in the column headed "over 2.0" show that from 3 to 10 percent of those who are labeled "poor" under the annual standard in 1972 (see the rows headed by "0.0 - 0.2 - 0.4 ... 0.8") have means over the five-year period which are more than twice their needs.

Although these data only permit comparison of results from a one-year accounting period with those covering a five-year period, they support the generalization that some households with a fairly high measure of "well-being" over a long accounting period will be judged "poor" over a shorter period. Thus, the population of "eligibles" under an assistance program with a one-month accounting period, for example, will contain a small, yet significant proportion of households with a fairly high annual income or other means.

In general, most of those nonpoor under one definition [e.g., a five-year measure] who become poor under an alternative definition [e.g., a one-year measure] will be concentrated in the categories with minimum poverty, i.e., with a means/needs ratio close to 1.0. 8/ These new poor [under the shortened accounting period] will usually have greater means relative to needs than will the remainder of the poverty population. This is because a shortening of the accounting period adds to the "welfare" population only those households which are not eligible for assistance during the whole of a longer accounting period. Their means are, therefore, likely to be greater than the means of those who are poor during the longer period.

Amount and Composition of Wealth

As the income accounting period is lengthened, income as a measure of means will by definition more closely approximate permanent or long-run income. 9/

An alternative to measuring means by such a concept of permanent income (i.e., an extended accounting period) is to use a weighted sum of current period income and wealth. For instance,

$$\text{Means} = a_1 Y_i + a_2 W_i \qquad (1)$$

where: Y_i = income in the current period;
W_i = wealth at the beginning of the period;
and a_1 and a_2 represent the weights assigned to each factor.

In most applications, a_1 equals one and a_2 is less than one, so that all income plus a fraction of wealth is counted as means during any period.

Compare this formula with the formula for means under an extended accounting period. In that case, averaging over the previous "n" periods yields:

$$\text{Means} = \frac{1}{n} Y_i + \frac{1}{n} \sum_{j=i-1}^{i-n} Y_j \qquad (2)$$

The essential difference in the two formulas is between the terms

$$a_2 W_i \text{ in (1) and } \frac{1}{n} \sum_{j=i-1}^{i-n} Y_j \text{ in (2).}$$

However, current wealth and past income are often highly correlated, especially as the time period over which income is measured is extended. This correlation can be demonstrated by the fact that current wealth can be represented as the accumulation of past savings. Where the propensity to save out of income is a constant and no inheritances are involved,

$$W_i = s \sum_{j=i-1}^{i-n'} Y_j \qquad \text{where } n' = \text{number of time periods in the life of the income unit.} \qquad (3)$$

It can be seen that as the accounting period is extended backwards to cover the lifetime of the income unit (i.e., as n approaches n'), there exist weights a_1 and a_2 which will equate the two measures of means (1) and (2).

However, an extended accounting period generally will not take into account all wealth at the beginning of the period. That is, wealth may be accumulated over a longer time than the horizon with reference to which income is usually measured under an extended accounting period. Moreover, the savings pattern assumed in (3) is not always realistic. Thus, the two measures (1) and (2) are equivalent only under the simplest of assumptions. Nonetheless, to the extent that the measurement of means is to approximate permanent income, then formulas (1) and (2), while differing in the weights placed on past income, savings, and inheritances relative both to each other and to current income, come much closer to that goal than does a simple one period measure of income.

From the above discussion, it appears that inclusion of wealth in the measurement of means will decrease the count of the "poor" in a manner roughly similar to a lengthening of the income accounting period. Both methods will count as poor less of those who have had temporary shortfalls in income, and more of those likely to be among the permanent or long-term poor. The relationship is not exact, of course, and the extent to which the two methods are related can only be determined by further examining actual data on households.

Portions of net worth are added to an income definition of means in five different ways in this study. First, in the SID panel measures, imputed rent for homeowners is added to SID Income to obtain Income-Imputed Rent for each household. Then the basic Income variable in the SEO file is adjusted to obtain the following four measures: 1) Income-Liquid Assets, 2) Income-Net Worth, 3) Income-Fraction of Net Worth, and 4) Income-Annuity. As noted in more detail in the section on "Data Sources," the basic meaning

of all these variables can be understood by adding to Income the other word or clause (Imputed Rent, Liquid Assets, etc.) in the hyphenated variable name. For instance, the Income-Liquid Assets variable is derived by adding liquid assets to income, while the Income-Fraction of Net Worth variable is derived by adding 10 percent of net worth to nonproperty income.

Table 1 reveals that inclusion in income of imputed rent from homeownership reduces the annual size of the poverty population by about one-sixth under either the one-year definition of income (10.9 to 9.0 percent: 17.4 percent) or a five-year definition (9.1 to 7.6 percent:16.4 percent). Addition of imputed rent insures that one major component of income -- rent saved because of homeownership -- is counted as income. Strictly speaking, imputed rent is income, so that the Income-Imputed Rent definition of means does not count net worth as means. There is no presumption in a means measurement based upon income-imputed rent that the value of the home is available in any way to meet consumption expenses. The imputation to income of the rental value of homes merely recognizes the contribution to means of the ownership of a major nonearning asset.

Table 6 reveals how the size of the poverty population changes as various components of net worth are added more directly to income in measuring means according to SEO Poverty Standard Definitions. When means are measured as Income-Liquid Assets, Income-Fraction of Net Worth or Income-Annuity (SEO Definitions 2, 4, and 5), there occurs a reduction of approximately 17 to 20 percent in the size of the poverty population from its size under a simple income standard (SEO Definition 1). When an extreme measure of means such as Income-Net Worth (SEO Definition 3) is adopted, however, 41 percent of those labeled as poor under an Income measure alone become nonpoor.

Table 7 indicates that when the SEO population is further broken into subgroups defined by ten socioeconomic characteristics, the incidence of poverty lies most heavily upon non-whites, those not in the labor force, the aged, and families with female heads. This result is consistent with that drawn from the SID data in Table 2. (Because results for an Income-Fraction of Net Worth definition of means [No. 4] are close to those for both Income-Liquid Assets and Income-Annuity [Nos. 2, 5], only the former results are discussed below and included in Tables 7 and 8.)

Table 8, utilizing the SEO data as Table 3 utilized the SID data, reveals the extent to which various socioeconomic classes are differentially affected by changes in the definition of poverty. Derived from Tables 2 and 7, it presents in summary form the percentage reduction in the size of the poverty population of various socioeconomic groups as the definition of means is changed from Income (SID/PSD 1 or SEO/PSD 1) to Income-Imputed Rent (SID/PSD 2), Income-Fraction of Net Worth (SEO/PSD 4) and Income-Net Worth (SEO/PSD 3).

This table reveals that for the self-employed and the aged there is far greater incidence of poverty under a simple Income definition of means than under a definition which takes into account their wealth. Non-whites,

Table 6. Percent of Total Population Falling into or near Poverty by Various Poverty Standards (Survey of Economic Opportunity)

SEO Poverty Standard	Means/Needs											
	0.00-0.20	0.21-0.40	0.41-0.60	0.61-0.80	0.81-1.00	Total in Poverty	1.01-1.20	1.21-1.40	1.41-1.60	1.61-1.80	1.81-2.00	Over 2.00
1	3.9	2.6	3.3	4.1	4.3	18.1	4.6	5.1	5.6	5.3	5.5	55.9
2	3.4	2.4	2.6	3.3	3.3	14.9	3.3	3.8	4.5	4.0	4.5	65.1
3	2.7	1.6	1.9	2.2	2.2	10.6	2.2	2.4	2.7	2.3	2.5	77.4
4	3.2	2.2	2.5	3.3	3.2	14.4	3.6	4.1	4.9	4.7	5.0	63.3
5	3.2	2.2	2.6	3.1	3.4	14.5	3.7	4.4	4.9	5.1	5.5	61.9

SEO Poverty Standard Definitions (PSD):

1. 1966 SEO Income/Needs less than 1.0
2. 1966 SEO Income-Liquid Assets/Needs less than 1.0
3. 1966 SEO Income-Net Worth/Needs less than 1.0
4. 1966 SEO Income-Fraction of Net Worth less than 1.0
5. 1966 SEO Income-Annuity less than 1.0

Table 7. Poverty Counts of Socioeconomic Groups (Survey of Economic Opportunity)

Percentage of Total Population of Specific Group Falling into Poverty

SEO Poverty Standard	Total Population	White	Non-White	Self-Employed	In Labor Force, but Not Self-Employed	Not In Labor Force	Head Aged 65 or More	Head under Age 65	Families with School-Aged Children	Families with Female Head	Families with Male Head
1	18.1	14.9	42.8	18.1	10.7	44.7	35.8	14.3	18.7	42.2	12.1
2	14.9	11.6	41.2	14.3	9.6	34.7	25.2	12.8	17.7	33.8	10.3
3	10.6	7.5	34.7	4.8	7.8	23.5	13.6	9.9	13.7	25.5	6.9
4	14.4	11.1	40.4	11.4	9.6	33.2	23.1	12.6	17.3	33.7	9.7
5	14.5	11.2	40.7	12.5	9.9	32.4	21.7	13.0	17.8	33.3	9.9

SEO Poverty Standard Definitions (PSD):

1. 1966 SEO Income/Needs less than 1.0
2. 1966 SEO Income-Liquid Assets/Needs less than 1.0
3. 1966 SEO Income-Net Worth/Needs less than 1.0
4. 1966 SEO Income-Fraction of Net Worth less than 1.0
5. 1966 SEO Income-Annuity less than 1.0

Table 8. Percentage Reduction in the Size of the Poverty Population of Various Socioeconomic Groups as Various Components of Net Worth Are Added to Income in Defining Means

Percentage Reduction in Count of	Total Population	White	Non-White	Self-Employed	Employed Not Self-Employed	Not in Labor Force	Head Age 65 or More	Head under Age 65	Families with School-Aged Children	Families with Female Head	Families with Male Head
Poor When Means = SID Income - Imputed Rent Over Poor When Means = SID Income (SID/PSD 2 vs. SID/PSD 1)	16.5	23.8	5.0	41.4	4.5	18.3	28.2	10.2	8.9*	13.0	21.4
Poor When Means = SEO Income - Fraction of Net Worth Over Poor When Means = SEO Income (SEO/PSD 4 vs. SEO/PSD 1)	20.2	25.6	5.7	36.7	10.1	25.8	33.5	12.2	7.9	20.2	20.2
Poor When Means = SEO Income - Net Worth Over Poor When Means = SEO Income (SEO/PSD 3 vs. SEO/PSD 1)	41.4	49.7	18.9	73.2	27.2	47.5	61.9	30.6	26.9	39.5	43.1

*Families with children aged 0 to 17 for this entry only.

families with school-aged children, and the employed but not self-employed, on the other hand, are affected less by the incorporation of net worth into the measure of poverty. This is because the low-income members of the latter-noted socioeconomic groups are likely to own fewer assets than are low-income members of the other two groups. Thus, when the size of the assistance pie is fixed, the self-employed and the aged have by far the most to gain by the exclusion of assets from means tests. Non-whites, families with school-aged children, and the employed but not self-employed will receive smaller shares of all assistance whenever net worth and home-ownership are ignored in means measurements.

This change in the distribution of the pie, as assets are excluded from means, affects many groups similarly to the change that occurs when the accounting period is shortened (as shown by SID and SEO findings in Tables 3 and 8). Both the exclusion of net worth and a shortening of the accounting period work cumulatively to increase the size of the poverty population, and, therefore, to give a smaller share of assistance to the average beneficiary. Also, in both cases, the greatest relative increase in numbers of poor occurs for the self-employed, while the least relative increase occurs among non-whites.

For other socioeconomic groups, however, results obtained by a shortening of the accounting period may differ from those obtained by excluding net worth and homeownership from means tests. Many of the aged, for instance, have low steady incomes, yet at the same time have accumulated a stock of wealth over their lifetimes. As a group, therefore, the aged gain from a lengthening of the accounting period while they lose when net worth is taken into account in means tests. For those "not in the labor force" a similar result obtains since many of the members of this category are also aged. The employed but not self-employed, however, experience the reverse situation: asset ownership is low, but income is subject to a moderate amount of variance. Hence, this group gains the most when the accounting period is shortened and net worth is included in means tests.

Families with school-aged children as a group are a relatively constant share of the poverty population no matter what the length of the accounting period. However, Table 8 indicates that exclusion of net worth from means measurements increases the poverty count of this group by less than that for the other groups. Over a life cycle, of course, this group will be no worse off than most other groups. However, the child-rearing years are typically years of higher borrowing relative to savings. Hence families with school-aged children as a group show average incomes but less than average wealth. Therefore, lengthening the accounting period decreases the share of assistance going to this group, while inclusion of assets in means tests increases their share.

Families with male heads, finally, have much to gain relative to families with female heads when the accounting period is shortened. Both groups, however, experience comparable reductions in the size of their poverty populations as components of net worth are added to income in

defining means. This combination of facts may be explained by the relatively low labor incomes of those widowed or divorced women who inherit or obtain homes and/or other assets of value.

Besides changing poverty counts, alternate definitions of means change the measures of "well-being" for households. "Well-being" has been defined as the ratio of "Means Divided by Needs." This ratio is less than one for families in poverty and ranges downward toward zero as poverty deepens in degree. Tables 9 and 10 display SID and SEO data for the distribution of households in poverty when counts by wealth-modified annual measures (SID Income-Imputed Rent, SEO Income-Fraction of Net Worth) are screened by income-based annual measures (SID Income, SEO Income). Table 9 reveals that the SID-based inclusion of imputed rent in the measure of homeowners' means shifts an appreciable proportion of the poverty population into the four or five next higher brackets of well-being. The majority of households, however, remain in the same Means/Needs bracket by both measures as highlighted by the bold numbers in parentheses. Most of those households which shift to higher brackets of "well-being" tend to remain in the adjacent brackets. 10/

In Table 10, using the SEO data, we again find that a majority of households remain in the same Means/Needs bracket even when a fraction of net worth (10 percent) is added to labor income in determining their means. Half of those poverty families that move higher go only to the next bracket, a relatively modest increase in the measure of "well-being." However, the table also indicates that a few percent of those who are measured as poor under an Income standard have tens of thousands of dollars in net worth. 11/

Table 11 summarizes the assets and net worth of those who are "poor" under a simple Income standard. It shows, for instance, that in 1966 18.6 percent of those households had assets in excess of $10,000 while 14.8 percent had net worth in excess of that amount.

Table 9. SID Income-Imputed Rent/Needs According to SID Income/Needs

SID Income-Imputed Rent/Needs

1972 SID Income/Needs	Poor 0.00-0.20	0.21-0.40	0.41-0.60	0.61-0.80	0.81-1.00	Nonpoor 1.01-1.20	1.21-1.40	1.41-1.60	1.61-1.80	1.81-2.00	2.00+	Totals Poor (≤1.00)	Nonpoor (≥1.01)
Poor													
0.00-0.20	***(93.6)***	2.4	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
0.21-0.40	0.0	***(81.3)***	5.0	3.1	3.9	3.5	3.2	0.0	0.0	0.0	0.0	93.3	6.7
0.41-0.60	0.0	0.0	***(64.6)***	27.5	3.7	2.4	1.9	0.0	0.0	0.0	0.0	95.7	4.3
0.61-0.80	0.0	0.0	0.0	***(53.5)***	29.9	11.0	2.4	1.4	1.7	0.0	0.0	83.4	16.6
0.81-1.00	0.0	0.0	0.0	0.0	***(62.7)***	19.5	12.9	2.0	2.0	1.0	0.0	62.7	37.3
Nonpoor													
1.01-1.20	0.0	0.0	0.0	0.0	0.0	***(67.2)***	20.1	10.0	1.9	0.8	0.0	0.0	100.0
1.21-1.40	0.0	0.0	0.0	0.0	0.0	0.0	***(68.2)***	14.2	12.1	3.4	2.1	0.0	100.0
1.41-1.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(55.9)***	23.0	9.6	11.5	0.0	100.0
1.61-1.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(46.3)***	24.3	29.3	0.0	100.0
1.81-2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(55.8)***	44.2	0.0	100.0
2.00+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(100.0)***	0.0	100.0
Totals													
Population	1.7	0.9	1.4	2.0	3.0	3.1	3.6	3.1	3.2	3.9	74.0	9.0	91.0
Poor	15.5	8.5	13.3	18.5	27.4	9.4	5.2	0.9	1.0	0.3	0.0	***(83.2)***	16.8
Nonpoor	0.0	0.0	0.0	0.0	0.0	2.3	3.4	3.4	3.5	4.3	83.0	0.0	***(100.0)***

Bold numbers in parentheses show the percentage of households which have the same relative measure of well being under either the income or the income-imputed rent measure of means.

Table 10. SEO Income-Fraction of Net Worth/Needs According to SEO Income/Needs

SEO Income-Fraction of Net Worth/Needs

1966 SEO Income/Needs	Poor 0.00-0.20	Poor 0.21-0.40	Poor 0.41-0.60	Poor 0.61-0.80	Poor 0.81-1.00	Nonpoor 1.01-1.20	Nonpoor 1.21-1.40	Nonpoor 1.41-1.60	Nonpoor 1.61-1.80	Nonpoor 1.81-2.00	Nonpoor 2.00+	Totals Poor (1.00)	Totals Nonpoor (1.01)
Poor													
0.00-0.20	***(82.1)***	7.79	3.6	1.5	1.3	0.4	0.7	0.7	0.0	0.0	1.9	96.3	3.7
0.21-0.40	0.0	***(73.7)***	10.3	6.3	2.4	1.4	1.4	1.9	0.3	0.1	2.1	92.8	7.2
0.41-0.60	0.0	0.0	***(64.6)***	16.7	4.8	4.6	2.0	1.7	1.3	1.4	2.9	86.1	13.9
0.61-0.80	0.0	0.0	0.0	***(61.7)***	13.5	8.2	4.9	3.2	1.7	1.3	5.5	75.2	24.8
0.81-1.00	0.0	0.0	0.0	0.0	***(56.3)***	17.0	8.8	5.3	2.7	2.5	7.5	56.0	44.0
Nonpoor													
1.01-1.20	0.0	0.0	0.0	0.0	0.0	***(51.2)***	16.6	7.9	6.5	5.0	12.9	0.0	100.0
1.21-1.40	0.0	0.0	0.0	0.0	0.0	0.0	***(51.1)***	19.6	9.1	6.2	14.0	0.0	100.0
1.41-1.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(54.1)***	19.7	10.2	16.0	0.0	100.0
1.61-1.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(49.9)***	21.7	28.4	0.0	100.0
1.81-2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(46.4)***	53.6	0.0	100.0
2.00+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***(100.0)***	0.0	100.0
Totals													
Population	3.2	2.2	2.5	3.3	3.2	3.6	4.1	4.9	4.7	5.0	63.3	14.4	85.6
Poor	17.6	12.3	13.9	18.2	17.7	7.0	3.9	2.7	1.3	1.2	4.3	***(79.8)***	20.3
Nonpoor	0.0	0.0	0.0	0.0	0.0	2.9	4.1	5.3	5.5	5.9	76.3	0.0	***(100.0)***

Bold numbers in parentheses show the percentage of households which have the same relative measure of well being under either the income or the income-fraction of net worth measure of means.

Table 11. Assets and Net Worth According to SEO Income/Needs

(a) Assets

SEO Income/Needs	Zero or less	1 - 999	1000-2499	2500-4999	5000-9999	10000-14999	15000-24999	25000- & Over
0.00-0.20	58.7	13.4	4.9	6.5	5.7	2.9	3.7	4.2
0.21-0.40	48.6	15.3	6.0	6.7	11.0	5.2	2.8	4.5
0.41-0.60	41.0	15.0	6.8	8.1	11.0	7.1	6.4	4.6
0.61-0.80	35.9	15.1	7.1	6.6	13.9	7.0	7.9	6.5
0.81-1.00	30.1	14.1	6.1	7.5	15.1	10.4	9.0	7.7
Poverty Population	42.2	14.5	6.2	7.1	11.4	6.7	6.2	5.7
1.01-1.20	23.8	15.4	4.0	7.2	15.6	9.1	13.3	11.6
1.21-1.40	20.8	15.8	4.9	7.3	12.9	13.4	13.8	11.1
1.41-1.60	17.9	18.9	5.7	5.5	13.9	15.2	15.0	7.9
1.61-1.80	13.7	18.5	4.6	4.5	13.6	14.6	16.3	14.2
1.81-2.00	11.8	17.2	4.4	5.0	12.8	13.7	22.2	12.9
Over 2.00	5.3	11.3	4.4	4.0	7.8	12.0	23.1	32.0
Total Population	15.1	13.4	4.8	5.0	10.0	11.4	18.3	21.9

Table 11. (Continued)

(b) Net Worth

SEO Income/Needs	Zero or less	1 - 999	1000- 2499	2500- 4999	5000- 9999	10000- 14999	15000- 24999	25000- & Over
0.00-0.20	61.3	12.8	5.1	6.5	6.4	2.6	2.6	2.7
0.21-0.40	52.1	14.3	6.4	8.0	9.5	3.7	2.1	3.9
0.41-0.60	43.8	14.3	7.8	9.0	10.3	5.6	5.2	4.0
0.61-0.80	40.0	13.9	8.9	6.6	13.4	5.7	6.1	5.6
0.81-1.00	33.4	13.8	8.3	9.3	13.5	8.3	6.8	6.7
Poverty Population	45.5	13.8	7.4	7.8	10.7	5.3	4.8	4.7
1.01-1.20	31.3	12.0	6.5	8.8	13.5	7.1	10.8	10.0
1.21-1.40	26.9	14.1	7.9	9.9	13.9	10.2	8.7	8.5
1.41-1.60	23.0	18.4	9.7	10.5	14.3	9.1	9.2	6.0
1.61-1.80	21.2	15.4	7.8	11.7	15.2	8.7	9.0	11.0
1.81-2.00	18.2	15.4	8.9	11.6	15.5	10.7	10.7	9.0
Over 2.00	9.6	9.6	7.6	8.8	15.3	12.3	14.6	22.3
Total Population	19.8	11.8	7.7	9.1	14.3	10.2	11.5	15.6

MEASURING MEANS FOR INCOME TRANSFER PROGRAMS

This paper thus far has examined how various accounting periods and wealth measures affect counts of poverty and the distribution of expenditures from welfare programs. The distribution of poverty across socioeconomic classes was found to vary dramatically according to the definition of means. The length of the accounting period and the extent to which assets should be counted as available to meet needs were shown to be issues for which various notions of equity between the permanent poor and the temporary poor lead to conflicting solutions.

In these final two sections the paper examines the application of means measurements in existing income-conditioned public income transfer programs. The first section discusses problems of categorical eligibility rules in the treatment of potential income which flows from wealth in both physical and human capital. The final section addresses the inconsistency and inequity among the numerous public income transfer programs in their use of different accounting periods, asset limitations, and asset exclusions as criteria for eligibility.

The Meaning of Means

Most current grant programs employ means tests on wealth through eligibility conditions. Some persons, otherwise eligible for grants, are made ineligibile through asset tests, usually limitations on the amount of liquid assets which grant recipients may hold. Typically, the grant, T_i, is a function of income, Y_i, provided that the amount of wealth, W_i, held by the individual is less than some specified amount, W_C. That is,

$$T_i = f(Y_i),\ W_i < W_C$$

However, the grant reduces to zero if the individual's wealth is greater than or equal to W_C, i.e.,

$$T_i = 0,\ W_i \geq W_C$$

At W_C, then, the marginal tax rate on the last one dollar of wealth is astronomical (technically it equals the ratio of the forfeited grant to one dollar, i.e., $T_i/1$), while at all other amounts of wealth, the marginal tax rate on wealth equals zero. This anomalous rate schedule encourages families to cheat when they have wealth in the vicinity of the limit and wish to file for grants. Families with wealth not greatly in excess of the limit feel encouraged to give the excess away or, where possible, to prepay expenditures. Also, families with wealth less than the limit have no incentive to hold it in the highest yield form because they are recompensed for the deficit. In this way families which expect to be eligible or nearly eligible for program grants may find little or no incentive to hold wealth and thus provide for the events against which

the program insures them. For these reasons, the wealth stipulations of many means-tested programs arbitrarily effect the number of persons eligible for grants.

These induced effects can be abated by adding to current income some fraction of the value of wealth holdings. The fraction, if not arbitrary, may reflect a judgment about the rate at which a family should spend down its wealth in supporting current consumption in its new low-income situation. The number may also equal the net yield (whether realized or unrealized) on the family's net worth; finally, it may be the higher of average market yield or actual net yield on net worth. In the last case, total income for means testing would be measured as labor income plus the higher of potential or actual property income. Any of these measures of means would achieve greater equity than current means tests in grant programs.

In fairness, if we are to means-test potential property income, we should also means-test potential labor income. In the past, the sturdy beggar has not been regarded as poor in the sense of deserving public alms. Present grant programs often recognize this fact by employing certain categorical eligibility rules which attempt, however crudely, to exclude those with human capital presumed adequate for their own support. These rules are necessarily crude because of the extreme difficulty of measuring potential labor income. However, current knowledge about human capital, where it exists, should be used to make as reasonable inferences of potential earning capacity as is possible. For instance, adequate recognition in both tax and grant programs must be given to the fact that, of two families with $10,000 of income, the one with one earner is better off than the one with two. In addition, a person's earning capacity could be related to both national and local unemployment rates. At any rate, it is possible to discriminate among persons with different potential earning capacity more accurately than is done now under many categorical elibibility rules.

Current Administrative Practices for Income-Conditioned Public Income Transfer Programs

Current public transfer programs vary in both asset tests and accounting periods for measuring income, with little consistency shown among the various programs (see Table 12). The asset limit, for instance, varies enormously across programs. For a family of two adults, that limit might be $2,250 under Supplemental Security Income or $35,000 under Section 235 Homeownership Assistance (if the couple is aged 65 or over). Under the program of general assistance to Indians, assets are treated as lump-sum income (which means they must be spent over some period deemed "reasonable" by the administrator). A number of veterans' programs assume that non-excluded assets are to be depleted over the remaining lifetime of the recipient, which roughly means that the annuity value of the assets should be added to wage income to determine total means.

Certain assets are excluded from consideration in all programs where there is an asset limitation. Practically all excluded assets fall into

Table 12. Asset Limitations and Accounting Periods for Income-Tested Public Transfer Programs: 1975

Program	Household Asset Limitation	Excluded Assets ($ amount where applicable)					Accounting Period						
		House	Car	Necessary Equipment or Property for Self-Support	Life Insurance	Personal and Household Goods	Annual	Biennial	6 Months	Quarter	Month	Period of Need	None
Supplemental security income (SSI)	$2,250 1/	X	X ($1,200)	X	X [$1,500 (face value)]	$1,500				X			
Aid to families with dependent children (AFDC)	2,000 2/	X 5/	X ($1,200)	X	X	X					X		
Veterans' pensions, non-service disabilities	None 4/ (assets considered as annuities)	X				X	X 3/						
Pensions for widows & children of veterans not killed in service	None 4/	X				X	X 3/						
General assistance to Indians	None 6/ (assets considered as lump-sum income)	X (if used)	X	X	X	X					X		
Health Assistance for veterans with non-service connected health needs	None 4/	X				X	X (prescriptions)					X (domiciliary care)	
Medicaid	See SSI or AFDC 7/	X	X	X	X	X			X				
Low-rent public housing	Varies by state 8/					X	X						
Section 238, homeownership assistance for low-income families	2,000 9/		X	X		X	X						
Section 101 rent supplement	2,000 10/			X		X	X						
Section 236 - interest reduction payments (rental & cooperative housing for lower income families)	None						X						

Continued

Table 12. (Continued)

Program	Household Asset Limitation	Excluded Assets ($ amount where applicable)					Accounting Period						
		House	Car	Necessary Equipment or Property for Self-Support	Life Insurance	Personal and Household Goods	Annual	Biennial	6 Months	Quarter	Month	Period of Need	None
Section 8 - lower-income housing assistance	None								varies by contract				
Section 518 - rural rental housing loans	None							X					
Farm labor housing loans and grants	None												X
Indian housing improvement program	Determined by local BIA agency												X
Food stamp program	$1,500 11/	X	X	X	X	X		varies according to certification period of household					
National school lunch program	No test						X (or current rate of income)						

1/ $1,500 for individuals.
2/ There is considerable variation among the states in applying asset limitations. $2,000 is the new Federal maximum for a family of four.
3/ Or from date of application to end of accounting year.
4/ For pensions established under an older law, there is no assets test. Under the new law all non-excluded assets are to be depleted over the remaining lifetime of the recipient.
5/ Homes owned and occupied are considered as meeting all or part of shelter requirements. Exclusions vary by state.
6/ Since non-excluded assets are treated as lump-sum income, program eligibles cannot have assets worth more than the maximum income under which assistance is received.
7/ Generally, asset limitations are somewhat more liberal than those necessary to obtain eligibility under SSI, AFDC or other transfer programs to which the recipient applies. Excluded assets listed here are those which are excluded in at least some states.
8/ H.U.D. encourages some limitation but amount varies by state.
9/ $2,000 + $300 x (number dependents) + mortgager's share of mortgage payment for coming year. (Or instead of $2,000, $25,000 if age 62-64, $35,000 if 65+, $50,000 if handicapped and 62+.)
10/ $5,000 if elderly.
11/ $3,000 if household contains 2 persons or more, one of which is aged 60 or over.

Source: U.S. Congress, Joint Economic Committee, Handbook of Public Income Transfer Programs: 1975 (Washington: U.S. Government Printing Office, 1975). Additional updates were provided by the Department of Health, Education, and Welfare, Office of the Assistant Secretary for Planning and Evaluation.

the categories of residential housing, automobiles, property or equipment necessary for self-support, life insurance, or personal household goods and articles. Some states exclude a home from the asset limit, while others evaluate it at equity and still others evaluate it at market. Some programs count the value of an automobile over a given amount, while others do not. Medicaid standards also vary; they are not based on some common criterion for all recipients but, in effect, use the eligibility rules of whatever other categories of assistance (e.g., AFDC, SSI) applicants first receive.

Consistency is also not to be found in the determination of the accounting period over which income is counted for determination of entitlements. AFDC is presumably determined on a monthly basis; most veterans and housing programs are determined on an annual basis. For food stamps the accounting period effectively equals the certification period, a period that varies according to the needs of the household and the approach of the administrator.

These inconsistencies are not merely the result of weak coordination. They occur inevitably as policymakers try to reach a new consensus on the goals of each individual program. Questions include: Who should be assisted, the permanent poor, the transitory poor, or anyone who might suffer from privation? How much should the program assist those for whom it was initially designed? How accurately and fairly can the relative consumption needs and elements of well-being be determined for target households? Which types of economic behavior should be encouraged? What types of inefficiencies should be avoided? What cost limits should be recognized?

Inconsistencies in treatment of net worth, income, and the accounting period are, therefore, not unusual given the importance of the above questions in the piecemeal approach of national policy toward elimination of poverty. Nonetheless, these inconsistencies inevitably lead to inequitable treatment of the poverty population, as defined by varying measures. Those who are supposedly "equally in need" tend to receive unequal benefits depending upon their knowledge of the programs for which they qualify, the stipulations of the program or combination of programs under which they receive assistance, the procedures of the state in which they live, and even the whims of program administrators.

CONCLUSION

Counts of the poverty population depend substantially upon the length of the accounting period and the extent to which net worth is considered available as means with which to meet consumption expenses during a period. The screening effects obtained by lengthening the accounting period are often similar to those obtained by adding some fraction of net worth to income in measuring means.

There are serious equity considerations in choosing the length of the accounting period and the treatment of net worth in measures of means. The share of total welfare going to various socioeconomic groups depends dramatically upon these two factors. In general, the long-term or "permanent" poor receive relatively less assistance under a short accounting period and through the exclusion of net worth from means measurements.

While there exist numerous equity and efficiency tradeoffs in the design of a welfare system, some choices must be made. Existing transfer programs, adopted in piecemeal fashion, have not made explicit their choices among various goals. These programs have adopted conflicting, confusing and inequitable criteria for eligibility.

FOOTNOTES

1. The calculation of the annuity value of net worth and the definition of means as income plus annuity value of net worth are similar to those contained in Burton A. Wesbrod and W. Lee Hansen, "An Income-Net Worth Approach to Economic Welfare," American Economic Review LXIII (December 1968): pp. 1315-1329.

2. Technically, the probability of being measured as poor is a question of how many ways there are to have at least x periods poor in n independent trials, with replacement but without regard for order. This is

$$\Pr\ (X \geq x) = \sum_{i=x}^{n} \binom{n}{i} p^i (1 - p)^{n-i},$$

where, for an accounting period of "n" work periods, "p" is the probability of not working, and "x" equals the minimum number of periods of non-work necessary to be measured as poor in the accounting period.

3. Terence Kelly, "Factors Affecting Poverty: A Gross Flow Analysis," the President's Commission on Income Maintenance Programs, Technical Studies. (Washington: U.S. Government Printing Office, 1970.)

4. Jonathan Lane and James Morgan, "Pattern of Change in Economic Status and Family Structure," Five Thousand American Families, Vol. III, edited by Greg Duncan and James Morgan. (Ann Arbor: Survey Research Center, University of Michigan, 1975) p. 34.

5. Model, data and results are described in Jodie Allen, "Designing Income Maintenance Systems: The Income Accounting Problem," Joint Economic Committee, Studies in Public Welfare, Paper Number 5, Part 3. (Washington: U.S. Government Printing Office, 1973.)

6. Plans 1, 8 and 3, ibid., pp. 85-87.

7. The data source for tables in this section is the Survey of Income Dynamics (SID). Our analysis of the SID is confined to five years of that survey so that imputed rent can be added to income measures when desired. See the Appendix for further details.

8. Again, the fact has been statistically documented by Jodie Allen. See Jodie Allen, "Designing Income Maintenance Systems."

9. Often, permanent income will be measured by a weighted average of past income rather than the simple average used below. Such an alteration in measurement would not notably change the relationships that will be discussed in this section.

10. A simple numerical example might explain why the shift upward is generally small. In the SID data, for an equity of $20,000 in a home the estimated imputed rent would be $1,200. $1,200 imputed rent would increase the Means/Needs ratio of a family with Needs of $4,000 by exactly 0.3.

11. Income-Fraction of Net Worth is calculated by adding to labor income 10 percent times net worth and then excluding income from net worth. If we assume that realized income from net worth approximates 5 percent, then each shift of "0.2" in Mean/Needs for a household with $4,000 in Needs represents net worth of approximately $16,000.

APPENDIX

The definitions of means that are derived from these surveys are as follows:

Definitions of Means Standards (Totals)

Survey of Income Dynamics (SID)

1. Income: 1972 total nonassistance family money income.

2. Income-Imputed Rent: 1972 total nonassistance family money income; plus imputed rent from housing.

3. Five-Year Average Income: 1968-1972 average annual total nonassistance family money income.

4. Five-Year Average Income-Imputed Rent: 1968-1972 average annual total nonassistance family money income, plus imputed rent from housing.

Survey of Economic Opportunity (SEO)

1. Income: 1966 total nonassistance family CPS income, plus lump-sum income.

2. Income-Liquid Assets: 1966 total nonassistance family CPS income, plus liquid assets.

3. Income-Net Worth: 1966 total nonassistance family CPS income; plus assets; less home, farm, and business debt; less one-half money income from assets.

4. Income-Fraction of Net Worth: 1966 total nonassistance family CPS income; plus 0.10 times net worth; less income from assets.

5. Income-Annuity: 1966 total nonassistance family CPS income; plus annuity value of net worth; less income from assets.

Definitions of Poverty Standards (Ratios)

Survey of Income Dynamics (SID)

1. 1972 Income/Needs, less than one.

2. 1972 Income-Imputed Rent/Needs, less than one.

3. 1968-1972 Five-Year Average Income/Five-Year Average Needs, less than one.

4. 1968-1972 Five-Year Average Income-Imputed Rent/Five-Year Average Needs, less than one.

5. 1968-1972 Income/Needs, less than one in any year.

6. 1968-1972 Income-Imputed Rent/Needs, less than one in any year.

Survey of Economic Opportunity (SEO)

1. 1966 Income/Needs, less than one.

2. 1966 Income-Liquid Assets/Needs, less than one.

3. 1966 Income-Net Worth/Needs, less than one.

4. 1966 Income-Fraction of Net Worth/Needs, less than one.

5. 1966 Income-Annuity/Needs, less than one.

The exact calculation of means from the variables on the Survey of Economic Opportunity and the Survey of Income Dynamics is as follows:

SID Income: Total family money income for 1972; less ADC or AFDC, less other assistance. Total family money income is the sum of taxable income plus grant income for all family members.

SID Income-Imputed Rent: Imputed rent for homeowners, plus SID Income for 1972. Imputed rent for the SID file is estimated as 6 percent of the equity value of the home.

SID 5-Year Average Income: The annual average of SID Income, 1968-1972.

SID 5-Year Average Income-Imputed Rent: The annual average of SID Income-Imputed Rent, 1968-1972.

SEO Income: Total CPS family income for 1966; plus lump-sum income; less public welfare; less private welfare; lump-sum income includes gains from sales of assets. Its addition makes the definition of SEO Income as virtually equivalent to SID Income, except for differing treatment of such items as lump-sum distributions from pension plans.

SEO Income-Liquid Assets: SEO Income; plus bank accounts; plus Government bonds; plus stocks and other securities.

SEO Income-Net Worth: SEO Income; plus total assets; less auto; less one-half income from assets; less debt on home, farm and business. In the Income-Net Worth measure, income from assets is defined as interest and dividends plus total rent received. This measure, an extreme one, assumes that all assets are available to meet consumption during the year, but that, if these assets are dissipated over the year, some income from those assets will not be received. Hence, it excludes one-half of income from assets.

It subtracts from means only those debt items needed to derive equity in home, business or farm. This SEO limitation on debts which can be counted against net worth is consistent with the current asset limitation tests of most public welfare programs.

SEO Income-Fraction of Net Worth: SEO Income; less Income from Assets; plus 10 percent of net worth, where net worth is defined as equal to total assets less value of auto; less total debt, excepting store, car, and medical debt. Store, car, and medical debt is excluded from debt here because the value of durable goods owned and "services received" is excluded from assets. Other debts (bank debt, land debt, etc.) are counted against net worth here in order to be more consistent with the standard economic definition of net worth. The Income-Fraction of Net Worth definition of Means implies that a certain percentage of net worth is available to meet consumption needs no matter what the actual income received on the assets.

SEO Income-Annuity: The same as Income-Fraction of Net Worth, with the annuity value of net worth substituted for 10 percent of net worth in calculating nonasset income. The annuity value of net worth is calculated by the value of an annuity certain for the family-life expectancy of the household, given a 4-percent interest rate and 1966 mortality rates. Family-life expectancy in this case is defined as the life expectancy of either the husband or wife if both are living, whichever figure is higher, as defined by by the National Center for Health Statistics, Vital Statistics of the United States, 1966, Table 5-4.

Two restrictions are placed upon the measures of means derived from the SEO file. First, equity in farm, busines, or home is held to be equal to or greater than zero. Second, means figures derived by adding some portion of net worth to income (i.e., the latter four definitions of means in Table 12) are treated as equal to or greater than SEO Income alone. The latter qualification makes our definitions of means generally consistent with the practice of current welfare programs in considering that negative net worth never increases a household's extent of eligibility. Otherwise, potential recipients would be encouraged to increase their debts and to buy assets such as durable goods or jewelry, the ownership and value of which are administratively impossible to determine.

From these definitions of means, it is simple to calculate poverty standards. A household is defined as "poor" if its means/needs ratio is less than one. Needs are defined by an Orshansky-type poverty threshold, FN, and have been calculated for both the SEO and SID files. Results for the SID file, however, differ from those for the SEO file because of changes in price levels over the years.

The reader is warned that the statistics in the tables presented in the text primarily show changes in the size and composition of the poverty population given changes in the definition of poverty. Their usefulness is subject to the following limitations on interpretation of the data:

(1) Since the SID and SEO sources have their own unique biases, tabular data derived from one source should not be expected to mesh rigorously with those derived from the other source. Moreover, the years in which the surveys were taken differ, as do the average levels of income in the economy for those years.

(2) Factors affecting the accuracy of any measure of absolute size of the poverty population under a particular poverty standard include sampling variability and, more importantly, response errors -- especially the under-reporting of income and assets. When, however, relative comparisons of the poverty population under two poverty standards are made, many response errors are common to both measures and tend to cancel out.

(3) The SID sample used here contains only those families with the same head for five consecutive years. Estimates derived from that sample are representative of a population with the same head for five years and not the population as a whole.

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